

REMARKS

Initially, Applicants would like to express their appreciation to the Examiner for the detailed Official Action provided.

Upon entry of the above amendments, claim 1 will have been amended. Claims 1, 4-6 and 9 are currently pending. Applicants respectfully request entry of the current amendments, reconsideration of the outstanding rejections, and allowance of all the claims pending in the present application.

On pages 2-4 of the Official Action, claims 1, 4-6 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Admitted Prior Art system shown in Figures 1, 2A-2D, 3A and 3B (hereinafter "the APA") in view of either of ESPER (U.S. Patent No. 5,335,862) or JP 11-287118.

Applicants respectfully traverse the rejection of claims 1, 4-6 and 9 under 35 U.S.C. § 103(a).

Applicants note that claim 1, as presently amended, is directed to a check valve system for regulating inlet fluid and outlet fluid in a reciprocating compressor to achieve check valve noise reduction. Applicants note that the teachings of ESPER are directed to a discharge nozzle for a liquid filling assembly, and that the teachings of JP 11-287118 are directed to exhaust flow control of an internal combustion engine. Applicants submit

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that these disparate teachings are clearly not analogous to the claimed system for regulating fluid in a reciprocating compressor. In this regard, Applicants note that the claimed system *regulates flow in two opposite directions* (i.e., inlet and outlet fluid), while the systems of ESPER (filling assembly discharge nozzle) and JP 11-287118 (engine exhaust flow) clearly *regulate flow in only a single direction*.

Accordingly, Applicants submit that the teachings of ESPER and JP 11-287118 are clearly not in the same field of endeavor as the present invention. Further, and contrary to the Examiner's stated position, Applicants submit that the teachings of ESPER and JP 11-287118 are not concerned with the particular problem addressed by the present invention, since neither of these references address *check valve noise reduction*, much less in a *dual flow direction system*. Accordingly, Applicants submit that one of ordinary skill in the art of reciprocating compressors (with dual direction flow) would not have looked to nonanalogous systems such as those of ESPER and JP 11-287118 (with unidirectional flow) for teachings of a valve.

Applicants note that claim 1, as presently amended, includes, inter alia, "an inlet check valve configured as a helical plate spring structure coupled with the inlet hole of the valve plate, wherein portions of the helical plate spring structure of the inlet check valve overlap, so as to reduce noise when the inlet check valve closes; and an outlet check valve configured as a helical plate spring structure coupled with the discharging hole of

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the valve plate, wherein portions of the helical plate spring structure of the outlet check valve overlap, so as to reduce noise when the outlet check valve closes.”

Applicants submit that the APA lacks any disclosure of check valves configured as a helical plate spring structure having portions which overlap, and that the Examiner appears to acknowledge as much in the rejection.

As noted above, the teachings of ESPER are directed to a discharge nozzle for a liquid filling assembly, and the teachings of JP 11-287118 are directed to exhaust flow control of an internal combustion engine. Applicants submit that these teachings are clearly not analogous to the claimed system for regulating fluid in a reciprocating compressor, which includes *a valve plate having both an inlet hole and a discharging hole*. Applicants further submit that one of ordinary skill in the art of reciprocating compressors (with dual direction flow) would not have looked to nonanalogous systems such as those of ESPER and JP 11-287118 (with unidirectional flow) for teachings of a valve, and particularly not for modifying a valve with *a valve plate having both an inlet hole and a discharging hole*.

Applicants further submit that ESPER and JP 11-287118 lack any disclosure of providing *noise reduction for check valves*, much less by the use of helical plate spring structures with overlapping portions. In this regard, note Paragraphs [20]-[25], [40] and [42] of the present application.

Accordingly, Applicants submit that the modification suggested by the Examiner is clearly the result of impermissible hindsight reasoning based upon the disclosure of the present application, rather than the teachings of the applied prior art.

Applicants also submit that dependent claims 4, 5, 6 and 9 which are at least patentable due to their dependency from claim 1, for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record.

Applicants respectfully submit that the rejection of claims 1, 4-6 and 9 under 35 U.S.C. § 103(a) is improper at least for each and certainly for all of the above-noted reasons. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection, and an early indication of the allowance of all of the claims.

SUMMARY AND CONCLUSION

Entry and consideration of the present amendment, reconsideration of the outstanding Official Action, and allowance of the present application and all of the claims therein are respectfully requested and now believed to be appropriate.

Applicants have made a sincere effort to place the present application in condition for allowance and believe that they have now done so.

Any amendments to the claims that have been made in this amendment, which do not narrow the scope of the claims, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered cosmetic in nature, and to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should there be any questions or comments, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
LEE et al.



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